

Fish Cleaning
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Cleaning is a pattern of behavior in which a small fish or shrimp (the cleaner) removes debris, mucus, parasites, infected tissue or other material from a larger fish (the client), and does so unharmed. The relationship appears to be mutually beneficial: the cleaner gets a meal and the client is rid of an irritant. Cleaners range from opportunistic scavengers to specialists with characteristic color patterns and attractive behaviors. Cleaning is a common phenomenon of tropical and subtropical reef ecosystems.

Although the Flower Gardens and Stetson Banks are remote from other reefs and small in area, cleaning occurs there regularly. My study aims to compare behavioral patterns and species involved in cleaning at the Banks with cleaning behavior observed in the Caribbean, Florida, Hawaii and the western Pacific. Of particular interest is whether or not pelagic fishes, such as sharks and mantas, visit the Banks and are cleaned, as has been observed on isolated banks in the eastern Pacific.

So far, two species of cleaners have been observed at the Banks: juvenile Spanish hogfish (*Bodianus rufus*) and neon gobies (*Gobiosoma oceanops*). The hogfish stay at "stations", usually areas around high coral mounds, where they live for months or more. The gobies usually reside on or near the bottom, especially near sponges.

Common clients of both are creole fish (*Paranthias furcifer*). The gobies often clean spotted morays (*Gymnothorax moringa*). Parrotfishes and groupers also are cleaned. No pelagic fishes have been observed being cleaned, but observations so far have been confined to summer, when pelagic fishes are uncommon at the Banks.

Shrimp have not been seen to clean at the Banks. Caribbean cleaner shrimp species often associate with large sea anemones, which are absent at the Banks. However, other shrimp species clean at night. No night observations have been made yet.

Cleaning at the Banks is most similar to that in the Caribbean. The species of goby cleaner is different from that in the southern Caribbean. No cleaning by juvenile bluehead wrasse (*Thalassoma bifasciatum*) has been observed at the Banks. Cleaning activity is very different from that in the western Pacific and Hawaii, where species of the wrasse Labroides perform nearly 100% of the cleaning.

Editor's Note: This description of fish cleaning behavior at the Flower Garden Banks was written for the Sustainable Seas Expeditions 1999 field season. Documentation of fish cleaning behavior continues.